GRAMINA PASCUA:

OR,

A COLLECTION OF SPECIMENS OF THE COMMON PASTURE GRASSES,

ARRANGED IN THE ORDER OF THEIR FLOWERING,

AND ACCOMPANIED WITH THEIR

LINNÆAN AND ENGLISH NAMES,

AS LIKEWISE WITH FAMILIAR

DESCRIPTIONS AND REMARKS.

BY G. SWAYNE, A. M.

VICAR OF PUCKLECHURCH, IN THE COUNTY OF GLOCESTER,
AND OF EAST-HARPTRY, IN THE COUNTY OF SOMERSET,
CHAPLAIN TO HIS GRACE THE DUKE OF GORDON,
HONORARY MEMBER OF THE ODIHAM,
AND
CONTRIBUTING MEMBER OF THE BATH
AGRICULTURE SOCIETIES.

Hic ſegetes, illic veniunt felicius uvæ:
Arborei, fœtus alibi;---atque injuſſa *vireſcunt*
Gramina. VIR.

BRISTOL:
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1790.

TO THE RIGHT HONOURABLE

THE PRESIDENT,

THE VICE-PRESIDENTS AND MEMBERS,

OF THE

METROPOLITAN SOCIETY,

INSTITUTED FOR THE ENCOURAGEMENT OF

ARTS, MANUFACTURES, AND COMMERCE:

TO THE RIGHT HONOURABLE

THE PRESIDENTS,

THE VICE-PRESIDENTS AND MEMBERS,

OF THE BATH AND ODIHAM

AGRICULTURE SOCIETIES;

AND

TO THE OFFICERS AND MEMBERS

OF THE OTHER PROVINCIAL AND MUNICIPAL SOCIETIES

INSTITUTED FOR THE LIKE LAUDABLE PURPOSES,

THIS NOVEL ATTEMPT

TO RENDER THE PASTURE GRASSES

AS WELL KNOWN AND FAMILIAR

AS THEY ARE BENEFICIAL TO THE FARMER,

IS MOST RESPECTFULLY INSCRIBED,

BY THEIR VERY HUMBLE

AND MOST DEVOTED SERVANT,

THE AUTHOR.

A P O L O G Y.

IN the remarks which accompany the following Specimens, the Author has purpoſely omitted to bring forward any opinion tending to decide on the reſpective value of the Graſſes, as compared with each other; becauſe, although he might have produced the detail of a few experiments of his own, together with an opinion reſulting therefrom; and although he is aware that ſome great names have given their verdict much in favour of ſome of them, to the diſadvantage of others, which probably might have been founded on experiments; yet, he apprehends, that ſuch experiments have not been ſufficiently numerous, ſufficiently extended, or ſufficiently diverſified, to juſtify any deciſion of this kind, or to aſcertain the real merits or demerits of any one of the Paſture Graſſes. One Graſs may not be ſo productive at one particular ſeaſon of the year as another Graſs may be: But it may be more ſo at another ſeaſon when its produce may be of more value; it may bear the inclemency of the Winter or the drought of the Summer better; it may be better in quality, more nutritious, or more palatable; it may renew its leaves ſooner after being cropped by cattle or cut with the ſcythe; and may poſſeſs many other valuable properties which one or a few experiments will not enable us to determine upon. Again, another Graſs may appear rough, and not ſo delicate to the human eye or feeling, as many others, which yet may be quite as well adapted to the maſticating organs of animals, and may ſuit their conſtitutions, as a food, as well as, if not better than, the more tender and delicate ones. Well-conceived and well-executed experiments are wanting to aſcertain theſe and many other points. And the Writer of this ſincerely hopes that ſuch experiments will at length take place; as he is convinced the reſult of them, would be for the advantage of his Country. He will not take upon him to direct in what manner ſuch experiments ought to be conducted. There are heads much better qualified for this purpoſe. And, indeed, Experimenters will be beſt enabled to form their judgments from the proceſs of their experiments. He will only juſt hint, that, he apprehends the firſt thing to be done, is, to obtain a ſeparate collection of the ſeeds of all the Paſture Graſſes in conſiderable quantity. Then to ſow them ſingly, and try them for a conſiderable time, with a view to determine their different effects in feeding and fattening the different kinds of cattle. Afterwards to join them in various combinations and various proportions, with, and without a mixture of other Plants, ſuch as perennial trefoils, vetches, &c.

Without farther extending this hint, he humbly hopes the pains he has taken in collecting, preparing and arranging theſe Specimens, may conduce to ſome intereſting experiments of this kind, and thus open the way for a general cultivation of all the moſt valuable of our paſture Graſſes. And ſhould this prove to be the caſe, he ſhall be well ſatisfied that his time and labour have not been miſemployed: Having long ago ſubſcribed to the opinion "that whoever could make two ears of corn, or two *blades of Graſs*, to grow upon a ſpot of ground "where only one grew before, would deſerve better of mankind, and do more eſſential ſervice to his country, "than the whole race of Politicians put together."

Introductory to the obſervations which follow, the Author thinks it incumbent on him to apologize for the liberty he has taken in giving a new *trivial* name to one of theſe Graſſes, namely, the *ſmaller* Feſcue. He is conſcious that his very confined knowledge in the Science does by no means authorize him to take ſuch liberty. But as this publication was chiefly intended for [redacted], ſuch as are not at preſent verſed in, and have no intention to addict themſelves hereafter to the general ſtudy of Botany; with Readers of this deſcription, it may be a ſufficient reaſon for appropriating the epithets of *larger* and *ſmaller* to the only two Species of Feſcue which are here introduced, that this was done, the more ſtrikingly to contraſt the two, and by this means make them the eaſier to be recollected. And it may be ſome excuſe for the innovation even with* [redacted], that our firſt Writers on Botany are by no means agreed in their determinations as to ſpecies and varieties, particularly with reſpect to the Graſſes.

* proficients in the science,

The real ſpecies of the Graſſes, it is preſumed, are not allowed by Botaniſts of the preſent time to be nearly ſo numerous as they have been repreſented by Writers of a ſomewhat diſtant date. A difference in ſoil and ſituation will often occaſion ſo ſtriking a difference in the appearance of theſe Plants, as has, no doubt, been the cauſe of determining many to be diſtinct ſpecies, which in reality are only varieties. And perhaps an adventitious admixture of the *Pollen* from different ſpecies may often produce hybridous plants, which might not uncommonly have deceived the Inveſtigator. Nor is it to be wondered at, if this ſhould *very frequently* happen amongſt plants which are ſo nearly allied, whoſe generating organs are apparently ſo ſimilar, and which are ſituated ſo cloſe together as the Graſſes generally are. It is rather wonderful, conſidering theſe circumſtances, that the real ſpecies of the Graſſes ſhould have continued ſo diſtinct as we find them; when it is well known what infinite and diſſimilar varieties have been produced by ſuch an admixture in ſeveral other ſpecies of Plants.

The Author has cultivated the Graſs which he calls the *ſmaller* Feſcue, on a ſmall ſcale, for a conſiderable time. The firſt ſeeds of it were obtained from the top of a wall; and he then ſuppoſed it to be the *ovina*. By cultivation it became of larger growth than in its original ſtate; and the produce of repeated ſowings at length accumulated the Stock of Seed which was lately advertiſed for ſale. And whoever has ſown, or ſhall hereafter ſow, any of that ſeed in different ſoils and ſituations, will, he believes, find plants ariſing from ſuch ſowing, which will agree in ſpecific characters with thoſe attributed by Botaniſts to be three ſpecies of Feſtuca termed the *ovina*, *rubra*, and *duriuſcula*.

That it is the *Gramen pratenſe paniculâ duriore laxâ unam partem ſpectante* of RAY, he has no doubt. Mr. CURTIS, it is apprehended, would pronounce it to be the *duriuſcula*. That Gentleman, in his preface to the firſt Faſciculus of the Flora Londinenſis, announced the Feſtuca duriuſcula as intended to be given in the next; but it has not yet appeared; at leaſt in the firſt five Faſciculi, which are the only parts of the work that have come under the Author's peruſal. He would be happy to read the diſquiſitions of that penetrating Naturaliſt on the ſubject.

A P O L O G Y.

Mr. HUDSON, if the Author rightly underſtands him, makes the *Feſtuca loliacea* and the *Feſtuca pratenſis*, varieties only of the *fluitans*, and aſſerts that the ſeed of the latter ſown in a garden, will the firſt year produce the *loliacea*, and the ſecond the *pratenſis*: And farther remarks that the *elatior* is ſo much alike the *pratenſis*, that there is good reaſon for doubting whether it be a diſtinct ſpecies.*

Dr. WITHERING has ſet down the *Meadow* Feſcue as a variety of the *elatior*, and has placed the *fluitans* under the ſubdiviſion of *paniculâ æquali*, whereas HUDSON has placed it under that of *paniculâ ſecundâ*. Indeed, neither of theſe Authors ſeems to ſuſpect that the *Sheeps*, *Purple*, and *Hard Feſcues* are varieties of one and the ſame ſpecies. But the Writer of this thinks he has ſufficient reaſon to believe this to be a fact. It is however very poſſible he may be miſtaken, as he has not, nor is it in his power to examine them with the nicely-diſcriminating eye of a CURTIS. If it be an error, he will be obliged to any perſon who will candidly point it out; profeſſing himſelf to be open to conviction, and when convinced, ready to retract.

To prevent all miſconception, it may be neceſſary to mention, that in particular ſeaſons, ſoils and ſituations, the Graſſes will not always be found to flower exactly in the order, which is here given. But, it is believed that the preſent will in general be found more accurate than any different arrangement.

After all, perhaps, many will think that the greateſt ſhare of the Apology is due for having fixed ſo high a price upon ſo ſlender a Volume. Were thoſe who are inclined to this opinion, to be apprized of the expence of the particular kind of Paper and Binding which have been judged neceſſary, together with that of printing, advertiſing, the Publiſher's charge, and other incidental expences, they certainly would not think the little profit which will accrue from the ſale of even the whole collection, too much for the labour which has been uſed; provided they will allow that it is deſerving of any reward at all.

* Since writing the above, the Author has read Profeſſor MARTYN's Letters on the Elements of Botany. In the thirteenth of which he has adopted this remark of HUDSON's. "In this Graſs, ſays he, we have another inſtance of the changes wrought by ſoil and ſituation. Three ſpecies having been made of "one, until experiment detected the truth, and informed us that the ſeeds of the *Flote-Feſcue* ſown in a dry-ſoil, become, the firſt year, *ſpiked*, and the "ſecond, *Meadow-Feſcue*. Nay, *tall Feſcue*, a fourth ſpecies, has ſo many marks in common with the laſt, that it is matter of doubt whether this alſo may "not be a variety only" The Editor of this collection has often ſown the ſeeds of the *Flote-Feſcue* in his Garden. They generally vegetated well; and the plants grew while the ſoil was moiſt: But whenever there was any continuance of dry weather, they were ſure to periſh. So far was it from becoming the *loliacea* or the *pratenſis*. In fact the *Flote-Feſcue* is an *aquatic* plant. And neither the *loliacea* nor the *pratenſis* have any pretenſions to this diſtinction. The *loliacea* is certainly a variety of the *pratenſis*, occaſioned by a deficiency of luxuriance, owing to a poverty of ſoil, or ſome other cauſe. In this ſtate, being abridged of the ramifications of a panicle, it becomes *ſpiked*, and very much reſembles the *lolium perenne*. The *elatior* bears a very great reſemblance to the *pratenſis*, and ſeems only to differ from it in being coarſer and of a more gigantic ſize.

As it may be thought requiſite that ſome general familiar deſcription ſhould precede the arrangement, the following is extracted from Profeſſor MARTYN's Letters on the Elements of Botany; which the Editor is certain, will be deemed much more pertinent, plain and elegant than any deſcription he could poſſibly compoſe himſelf.

—— " Graſs vulgarly forms one ſingle Idea; and a huſbandman when he is looking over his incloſure, does " not dream that there are upwards of three hundred ſpecies of Graſs, of which thirty or forty may be at preſent " under his eye. They have ſcarcely had a name beſides the general one, till within theſe twenty years; and the " few particular names that have been lately given, are far from having obtained general uſe: So that we may " fairly aſſert that the knowledge of this moſt common and valuable tribe of Plants is yet in its infancy."

—— " The greater part of the world ſcarcely know that Graſs has a flower; or if they are ſhewn it, will coldly " aſk—and is this all? And yet Graſs not only has a flower, but every conſtituent part of it; which is more than " we can ſay of a Tulip, and ſome others, that have engroſſed almoſt all the attention of mankind; nay, there is " ſuch a variety in the parts, diſpoſition and manner of the flowering, that we have ſufficient marks in the fructi- " fication to diſtinguiſh about forty Genera.

" Some particular characters, reſpecting the Flowers, you will find common to every Graſs you examine. " But this tribe of Plants does not agree in the parts of fructification only. The whole appearance, the general " air, the manner of growth, is the ſame in all. A ſimplicity of ſtructure runs through the entire Claſs. Every " one has a ſimple, unbranched, ſtraight, hollow ſtem, ſtrenghened with knots at certain intervals. There is " none but has a ſingle leaf to each knot, inveſting or ſheathing the ſtem to ſome diſtance, and then ſpreading " out into a long narrow ſurface of equal breadth all the way, till it approaches the end, when it draws off " gradually to a point. The leaf is alſo invariably entire in every ſpecies; and without veins or branching " veſſels, being only marked longitudinally with lines paralel to the ſides, and to a nerve or ridge that runs the " whole length of it. There is another curious circumſtance almoſt peculiar to this tribe of Plants, and common " to them all; namely, that the body of the ſeed does not ſplit into two lobes, but continues entire till it has " accompliſhed its purpoſe of giving the young plant its firſt nouriſhment and then rots away."

MARTYN's Letters on the Elements of Botany,
Let. 13th Page 133 and ſeq.

POA ANNUA. (LINNÆUS.)

ANNUAL MEADOW-GRASS. (HUDSON.)
SUFFOLK GRASS. (STILLINGFLEET and WITHERING.)
COMMON DWARF POA. (CURTIS.)

It was at first intended to have excluded this and the *soft Brome Grass* from this collection, on account of their not being perennial. But so much has been written on the *annual meadow-grass* by STILLINGFLEET, CURTIS, and others; and the *soft Brome* appears in so great quantity in most of our mowing-grounds, that it is apprehended the omission had been deemed unpardonable.

This Grass is readily distinguished from the two other species of this genus which are afterwards introduced, by its humble growth, as well as by the tender, delicate contexture of its leaves and stalk. It is of annual duration. The flowering stalks make their appearance in a very short time after the seeds begin to vegetate: and the same plant will continue to send up fresh flowering stalks, a considerable time. Indeed, the different plants flower from March to December; and, sometimes, when the weather is mild, all the winter long. A considerable quantity of ripe seed has been collected by the Writer of this so early as the month of April. It is a common weed in most gardens, courts, &c.—is the first Grass which occupies foot-paths after they have been a little while disused; and such places as have been much trodden by the Feet of Cattle; as round hay-ricks and near gate-ways.

Mr. CURTIS observes, that there is "no Grass better entitled to RAY's epithet *vulgatissimum (very common)* "than this, as it occurs almost every where, in meadows, gardens, at the sides of paths, and on walls: when it "grows in a very dry situation, it frequently does not exceed three inches. But in rich meadows it often grows "more than a foot in height. The panicle is frequently green, but in open fields, it acquires a reddish tinge."

Notwithstanding this remark, that it is so *very common*, yet in meadows and pasture grounds that have been long laid down to grass, it is scarcely to be met with; unless in the particular parts of them mentioned above, as pathways, &c. This we may readily conceive from its being an annual, and a plant of a delicate frame and dwarf stature.

The flowers of this Grass in the spring are oderiferous, smelling not much unlike the flowers of the plant called mignionette or sweet reseda, and retain this smell a considerable time after being dried. This therefore militates against the observation which has been made that the *vernal* is the only oderiferous Grass. The seeds fall off upon the least touch as soon as ripe. Hence it will be impossible to collect them without great waste after cutting the grass with a scythe. Besides, one half of the stalks will have shed their seed, before it is half ripe in many of the panicles, and even before some of them are in blossom.

The best method the Author has experienced in a small way, is, with an uncovered Chip Box (such as the Toy-makers furnish) containing about a pint or a quart, in each hand, holding the right-hand Box with the thumb on the edge on one side, and the fingers at the bottom of the Box, to sweep with the other edge along the surface of the Grass pretty rapidly, raising the edge which strikes the Grass upwards as the stroke advances; the Box will be found to have collected a quantity of pure seed, which is immediately to be discharged into the receiver in the left hand. By this method the unripe panicles are left to perfect their seeds; which, in a few days must be thus swept over again, and will produce a second collection. This process with the intermission of a few days between each collection, may be pursued from April to October, or November, in which time a large quantity of seed must undoubtedly be collected.

The tips * (antheræ) of the flowers of this Grass are of a pale greenish-white colour. For further observations on this Grass, see CURTIS's Flora Londinensis and STILLINGFLEET's Tracts.

ANTHOXANTHUM ODORATUM. (LIN.)

VERNAL or SPRING GRASS. (HUDSON.)
SPRING GRASS. (WITHERING.)
SWEET-SCENTED or VERNAL GRASS. (CURTIS.)
VERNAL GRASS. (LIGHTFOOT and ANDERSON.)

The flowering heads of the grasses are termed by Botanists either *Spikes* or *Panicles*. A *Spike* is, when all the flowers, or little assemblages of flowers arise from one common simple stem. In *Panicles*, they are dispersed on different stems or branches. But no definition will give so good an idea as examples. The *Vernal*, *Foxtail*, *Darnel*, *Dogstail*, *Meadow-Barley*, and Catstail, of this assortment are *Spikes*, all the rest are *Panicles*. When the Grasses are in flower these Spikes and Panicles are beset with little forked *Tips* or *Anthers*, (Antheræ) which are covered with a powder of a different colour on different species of Grass, and sometimes differently coloured on the same species.

The Tips or Anthers are supported by slender thread-like props or filaments, and are the male organs of the plant. These coloured Anthers contain the prolific substance which impregnates the female organs. The female organs in the Grasses are two little feathery styles, issuing from a minute germ or seed-bud, and terminated each with a feathered summit.

The Vernal Grass is distinguished from all the rest of the Grasses by having but *two* of the male organs, whereas all the rest have *three*. This is one very peculiar character whereby it may be certainly known. Besides this, it has a very remarkable smell. Mr. CURTIS says, "The Farmer, or those who have not been accustomed to "examine plants minutely, may readily distinguish this Grass by its smell: if the leaves (or any part of the plant) "are rubbed betwixt the fingers they impart a grateful odour, like that of Woodruff;—hence I have called it "sweet scented.

These marks, together with its early appearance, will not leave a possibility of mistaking it. It grows chiefly in the moist parts of meadows and pastures. The largest and most luxuriant growth of this Grass ever observed by the Author, was on a Turbery or Peat Bog. It flowers the beginning of May. When this Grass is in blossom, it is very conspicuous, and occurs very readily, altho' it is not one of the taller Grasses. The reason is, that the stalks of the others have not then finished their growth; and some of them scarcely made their appearance. But when the seed is nearly ripe, it is in very different circumstances. It is then surrounded by a throng of taller Grasses, and scarcely to be seen. In this situation the Spikes become more erect than when they were in blossom. Yet it is quite necessary to be very observant of the proper time of collecting the seed; since, notwithstanding the Spikes are necessarily kept in an upright position, and the seeds consequently cannot *fall* out of the husks, yet, there is a provision of nature for the purpose of disseminating them. When the seeds are in a state fit for being committed to the earth, the larger *arista* or awn, which adheres to the *corolla* or flower-cup, the part of fructification which immediately incloses the seed, bends, and twists itself in a spiral manner, and by this operation lifts the seeds out of their husks. This circumstance makes it necessary for those who wish to collect the seed, to do it just at the time of its ripening. Indeed, the upper part of the husks is often evacuated before the lower part is scarcely ripe.

* This is a term of Dr. WITHERING's, which will be explained in the next article.

This Grafs feems to be of a very warm, aromatic quality, and therefore may poffibly be of great ufe in preventing or curing the diforders which cattle are liable to in the Spring. But if the rankneſs and *heaving* of cheefe be owing to the effential oil of the plants which are taken in as food by the cows (as Mr. MARSHALL, in his rural Economy of Gloucefterfhire lately publifhed, has by reafon and experiment rendered more than probable) however beneficial it may be as a medicinal plant, it is likely to be detrimental in another refpect as an article of pafture for kine.

The *Tips* of the flowers are at firft flefh-coloured, and afterwards of a purple hue. For further remarks on this Grafs, fee CURTIS's Flora Londinenfis, STILLINGFLEET's Tracts, and ANDERSON's Effays on Agriculture and rural Affairs.

ALOPECURUS PRATENSIS. (LIN.)

MEADOW FOX-TAIL GRASS. (HUDSON, CURTIS, WITHERING and LIGHTFOOT.)
BULBOUS FOX-TAIL GRASS. (ANDERSON.)

There is another of the Graffes among thefe fpecimens, which bears a Spike fomewhat refembling this: which is the Phleum or *Catftail.* But as that does not appear till the month of July; and this is one of our earlieft Graffes, there will be no danger of their being confounded. The Spike of the Catftail is in general longer, and very rough to the feeling, owing to the fharp, forked termination of the hufks: whereas the Spike of the Foxtail feels very foft and fmooth. Its anthers or tips are likewife larger than thofe of the Catftail. This Grafs abounds chiefly in rich, moift foils; and it is oftener to be met with in fmall inclofures, at no great diftance from the hedges, and in fheltered places, than it is in large open meadows, and champaign paftures. It bloffoms the beginning of May, fcarcely later than the Vernal. The feed is not in fo great hafte to quit the ftalks, as that of many of the Graffes is: yet it is by no means an eafy matter to collect a quantity of good feed, owing to a peculiar fpecies of infects, which inhabit the hufks and make the tender feed their food. Thefe infects are the *Larvæ* or Caterpillars of a fpecies of *Mufca*, or Fly.

Mr. CURTIS, in a note fubjoined to his Obfervations on the Foxtail Grafs, in the Flora Lond. has done the Author the honour to quote his remark, which was firft publifhed in the 2d Volume of the Bath Society's Memoirs. That ingenious Writer has fince obferved (fee Annals of Agriculture N°. 70, P. 349) that he believes *one* third of the feed is yearly deftroyed by the ravages of thefe infects. From this obfervation it appears that he has been more fortunate than the Writer of this has been; fince, from *his* experience he has concluded that at leaft *two* thirds of the feed are conftantly deftroyed by their ravages. Indeed, fo very general and fo very numerous are thefe infects in the fituation defcribed, as feemingly to juftify an apprehenfion that they would foon multiply to fuch a degree as entirely to exterminate this fpecies of Grafs; at leaft effectually to hinder its propagation by feed.—But this the difpenfation of an all-wife Providence prevents, by the inftrument of another fpecies of infect, which makes thefe Larvæ its peculiar food. This is a fpecies of *Cimex* or Bug; whofe *roftrum* or trunk appears to be peculiarly adapted for penetrating between the hufks of this Grafs, and extracting the fubftance of thefe minute infects which inhabit them. This infect, like moft of the fpecies of *Cimex*, when crufhed, or even handled, is exceedingly offenfive to the fmell. And fo corpulent does it become by its gluttony, that, altho' it is furnifhed with wings, it can fcarcely make any ufe of them; and not even walk with any agility. It is probable that it deftroys thoufands in a day.—How fuperlatively wonderful are the providential difpenfations of the great Creator! Without his particular direction a fingle fpecies of Grafs can no more become extinct, than an individual *fparrow fall to the ground.*

There is another circumftance peculiar to this Grafs, which, it is believed, has not been taken notice of before; and that is, that its ftalk continues green and fucculent after the hufks are dropped from it. Which, as this happens a confiderable time before the feafon of hay-making, will no doubt be looked upon as a circumftance in its favour as a Hay-Grafs.

Thofe who are about to collect the feed of this Grafs need not cut off the ftalks; as the hufks with the contained feed are readily ftripped off by drawing the Spikes' thro' the hand. But on account of the abovementioned circumftances, the collector muft expect a large proportion of chaff, with a very little feed.*

A feed of this Grafs greatly refembles a grain of wheat in miniature.

The *antheræ* of the bloffoms are in general purple, but in fome varieties of a very pale yellow.

See *Curtis's Flora, Stillingfleet's Tracts, and Anderfon's Effays.*

BROMUS MOLLIS. (LIN.)

SOFT BROME GRASS. (CURTIS and LIGHTFOOT.)
FIELD BROME GRASS. (HUDSON.)
SOFT BROOM GRASS. (WITHERING.)

In pafture grounds that are conftantly grazed, this Grafs appears but feldom, but in thofe that are frequently under the Scythe, it is very abundant. In many fields near large Towns this Grafs at mowing time feems to be almoft the fole crop. The reafon of which is apprehended to be, that, being an early biennial Grafs, and its feeds being conftantly ripe at the time of mowing, and eafily parting from the panicle, are by the operation of hay-making, plentifully fcattered on the ground, where they vegetate and ftrike root with the firft rain that falls. And producing, moreover, quick and ftrong-growing plants, when they have once taken poffeffion of the ground, they continue to keep it. In grounds that are conftantly paftured the cafe is otherwife. Tho' we fhould conceive fuch grounds for once to be fufficiently ftocked with plants of this Grafs, yet they would not long keep poffeffion. As foon as the flowering ftalks * fhot up early in the Spring, they would be immediately cropped by the cattle; and, this being a Grafs which lafts only part of two years, and requires to be continually renewed by feed, in fuch fituations, it would foon be extirpated; or, if not totally expelled, would appear but unfrequently.

* Should have

The feeds are large and approach to the fize and nature of Corn. And it is faid that the feeds of fome fpecies of this Genus mixed with Corn may be ufed to make bread: but when mixed in too large a proportion, they render the bread brown and bitter; and thofe who eat it experience a temporary giddinefs.

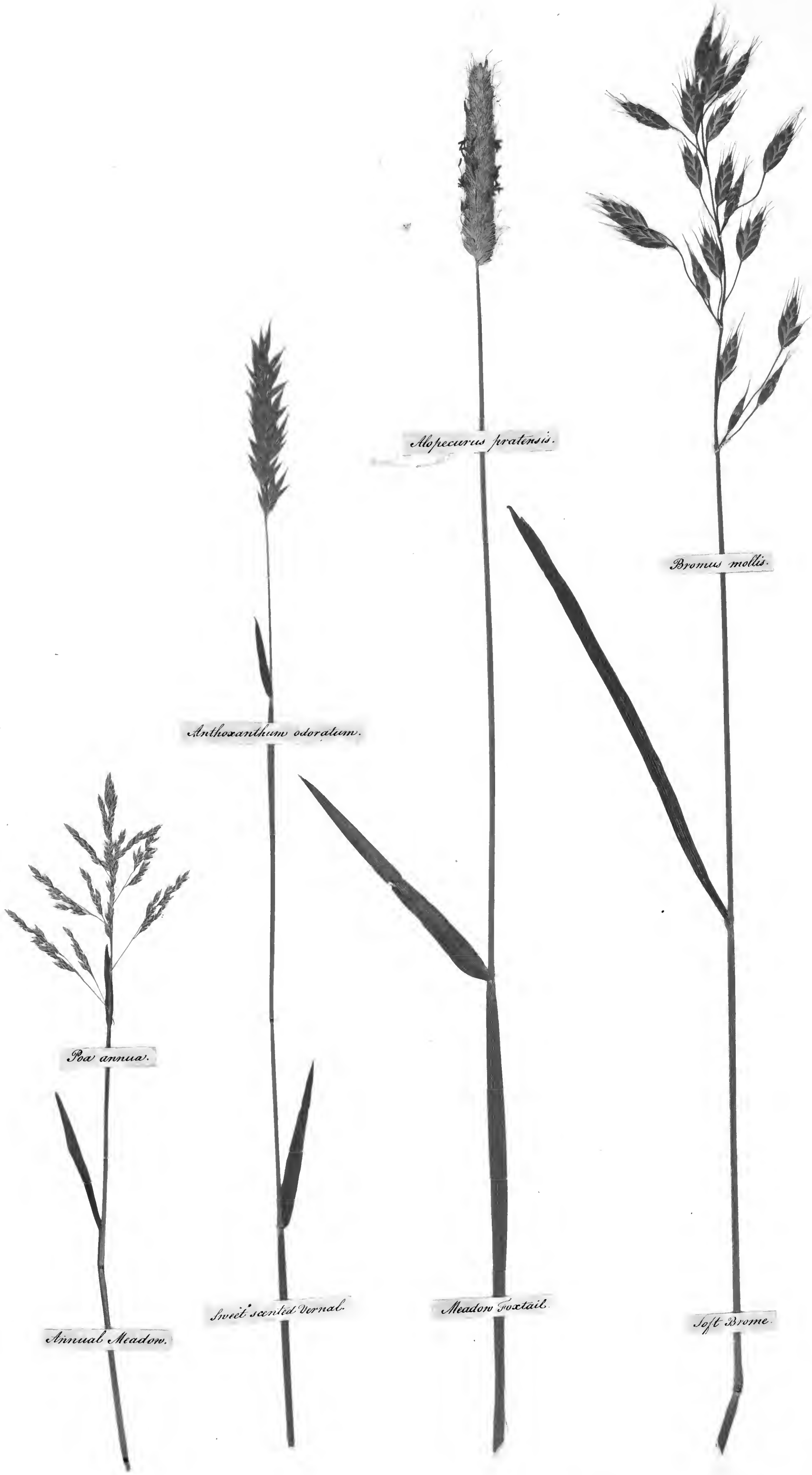
Being the only fpecies of this genus introduced among thefe fpecimens, it will be readily known from the reft. There is however another fpecies of Brome which occurs not unfrequently in lands which have been newly laid down to Grafs, namely, the *Bromus fterilis*, or *barren* Brome, which has very long awns (ariftæ) and flowers early in June. As it fcarcely ever makes its appearance in old leys, it was thought unneceffary to produce a fpecimen of it.

The Tips of the Soft Brome are fmall in proportion to the feed and panicle. They are when firft protruded of a bright orange colour, and afterwards change to a brown or fnuff-colour. It affects dry land: and the feed might eafily be collected in fome fields in large quantities; but the time of their ripening muft be carefully attended to. It flowers the third week in May.

Further obfervations on this Grafs may be read in CURTIS's Flora.

* The Author is happy to find, by a communication to the Editor of the Annals of Agriculture from LEWIS MAJENDIE, Efq; printed in the 71ft N°. of that Publication, that all obftructions to the cultivation of this Grafs are in a fair way of being overcome.

+ Shoula


Alopecurus pratensis.
Bromus mollis.
Anthoxanthum odoratum.
Poa annua.
Annual Meadow.
Sweet scented Vernal.
Meadow Foxtail.
Soft Brome.

POA PRATENSIS. (LIN.)

SMOOTH-STALKED MEADOW GRASS. (CURTIS.)

GREAT MEADOW GRASS. (HUDSON, WITHERING, and LIGHTFOOT.)

CREEPING MEADOW GRASS. (ANDERSON.)

The panicles of this Grafs and its next neighbour are fo very fimilar in their fuperficial appearance, that even profeffed Botanifts can fcarcely diftinguifh them at a little diftance. Yet when nearly and minutely examined they differ greatly in their conftituent parts, as well as the fituations and foils which the plants affect. This flowers a little earlier than the other; likes a dry porous foil; and propagates itfelf chiefly by its roots, which creep juft beneath the furface of the earth, in the manner of Couch Grafs (Triticum repens.) It confequently predominates in thofe meadows or paftures which have been lately laid down to Grafs, where the foil is yet loofe, and the roots can find an eafy paffage. In antient Leys there is very little of it to be found. The ftalks of this Poa are in general not fo tall as thofe of the Poa trivialis. But there are two marks of diftinction by which they may be quickly and infalliby known from each other. The ftalk, and the leaves which fheath the ftalk, in this Grafs, are perfectly fmooth, and will fo appear to the feeling, if the ftalk be drawn between the finger and thumb: whereas the ftalk with its appendage in the other fpecies will be found to be as perceptibly rough. The other certain characteriftic is, that at the bafe of the ftalk-leaf, at the point where it feparates from the ftalk after fheathing it, in both thefe Graffes, there is a thin tranfparent membrane. But the difference is, that this membrane in the *fmooth-ftalked meadow* Grafs is *fhort* and *blunt*, in the rough-ftalked it is *long* and *fharp*. For the difcovery of thefe laft mentioned elegant fpecific characters, the Botanical World is indebted to the excellent Author of the Flora Londinenfis.

This Grafs flowers about the third week in May. Its feed in general remain in the hufks a confiderable time after they are ripe. Thefe are larger than thofe of the Poa trivialis. The feeds of both fpecies have a downy fubftance adhering to them fomewhat like cobwebs.

The Tips are commonly of a purplifh colour; but fometimes of a whitifh yellow.

Further remarks on this Grafs may be feen in the Flora Lond. and ANDERSON's Effays.

POA TRIVIALIS. (LIN.)

ROUGH-STALKED MEADOW GRASS. (CURTIS.)

COMMON MEADOW GRASS. (HUDSON, WITHERING, and LIGHTFOOT.)

CREEPING SOFT GRASS. (ANDERSON.)

The marks whereby to diftinguifh this Grafs have been mentioned above. Yet it may not be amifs to add, that altho' the ftalks and the leaves which fheath the ftalks are *rough* in this Grafs, yet the leaves which it firft puts forth, are exceedingly fmooth, tender, and delicate. It affects a moift fituation; and feems to flourifh in a particular manner in places where a thin fheet of clear water is frequently thrown over, as in water-meadows, and the currents of fprings.

When the feeds are become ripe they foon drop; and the ftalks and rough leaves of the plant will be found to be covered with them; adhering by the downy cobweb-like fubftance which has been mentioned above: and, with which the feed of this fpecies is more plentifully attended than that of the former. Indeed fo much of this down is intermixed with the feeds, and fo clofely does it ftick to them, that it is a very difficult matter to feparate them from it, fo as to fcatter them properly in fowing. They have been known to have been rubbed together for a confiderable time, and other methods ufed to diffolve the connection without any fuccefs: when fown they would fall in lumps, in the quantity of a quarter or half an ounce together. Perhaps a little frefh-flacked lime mixed with the feed, and well rubbed with it, may have the effect of cauterizing this lanuginous fubftance, and difcontinue the adhefion, without deftroying the vegetative quality of the feed.

The anthers are of the fame colour as thofe of the other fpecies.

It flowers about the fourth week in May.

See CURTIS's Flora, and ANDERSON's Effays.

FESTUCA, OVINA, RUBRA, DURIUSCULA. (LIN.)

Sheeps, Purple, Hard FESCUE. (HUDSON, WITHERING, and LIGHTFOOT.)

Sheeps, and Purple FESCUE. (ANDERSON and STILLINGFLEET.)

Smaller FESCUE.

So much has been faid in the prefatory Apology refpecting this Grafs, that there is the lefs need of enlarging on it here. The moft ready criterion whereby the common obferver may diftinguifh this fpecies from the other Grafs of this family, which will be mentioned hereafter, namely, the *larger* or *meadow* Fefcue, is the difference in the general fize of the two plants. This is in all refpects fmaller than the other, particularly the leaves, which in very dry and poor foils, are very fhort and fmall, refembling briftles. In rich foils they are confiderably broader and longer; but never fo much fo as to compare in fize with thofe of the *meadow* Fefcue. It is to be found on moft foils, yet feems to be rather partial to fuch as are moderately dry. The beft fheep paftures abound with it. It bloffoms the latter end of May and beginning of June.

The Tips are purple.

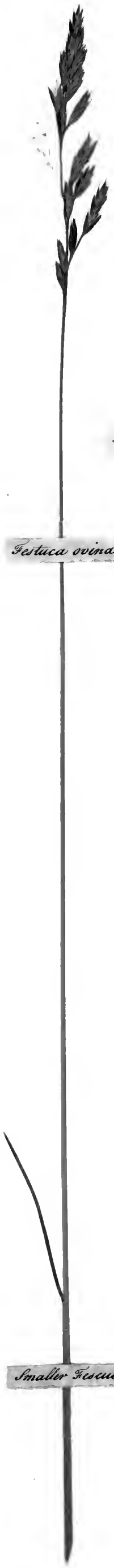
See *Stillingfleet's Tracts* and *Anderfon's Effays*.

Poa pratensis.

Smooth Stalked Meadow.

Poa trivialis.

Rough Stalked Meadow.



Festuca ovina.

Smaller Fescue.

BRIZA MEDIA. (LIN.)

MIDDLE QUAKING GRASS. COW-QUAKES and LADIES HAIR. (HUD. and WITH.)

COWQUAKES. QUAKING GRASS. (LIGHTFOOT.)

WAGWANTON. TREMBLING GRASS. (VULGO.)

This Grafs produces a moft elegant and curious panicle; which there is no danger of miftaking for that of any other Grafs. The heart-fhaped fpiculæ, or *fpikelets*, which contain the flowers, are confiderably large; but the footftalks or fupporters of them are fo very flender, and at the fame time fo elaftic, that the leaft breath of wind keeps them continually in a tremulous motion: Hence its names of Quaking Grafs, &c. It flowers the beginning of June.

Mr. RAY in his Synopfis obferves, that the old proverb "*May, come fhe early, come fhe late, makes the Cow* "*quake*," has by fome been interpreted of this Grafs: namely, that the month of May, whether it comes early or late (does not make the Cow to fhudder or quake, but) produces the Grafs called Cow-quakes. As this Grafs at prefent fcarcely ever bloffoms before June, are we to infer that our fpring feafon is now later than it was a century back?

Dr. WITHERING remarks that if a feed of this Grafs be carefully diffected in a microfcope with a fine lancet, the young plant will be found with its root and leaves pretty perfectly formed. It will be found to grow chiefly in wet fpringy ground. It does not drop its feed when ripe fo eafily as many of the graffes.

Its anthers are generally purple, yet are they fometimes whitifh.

DACTYLIS GLOMERATA. (LIN.)

ROUGH COCK's-FOOT GRASS. (HUDSON, WITHERING, and LIGHTFOOT.)

ORCHARD GRASS.

The general appearance of this plant does not prepoffefs the Farmer much in its favour. It is very perceptibly rough in all its parts. Yet it may not be the lefs valuable on this account.

The feeds of a fpecies of Dactylis were introduced into this country about twenty years ago as a *new* Grafs from America, and highly extolled under the name of *Orchard Grafs*.

This Grafs fends up but few flowering ftalks in proportion to its produce of leaves.

Mr. LIGHTFOOT has the following remark fubjoined to his defcription of this Grafs. "It is a very trouble-"fome creeping Grafs in a garden and difficult to be deftroyed. The Gardeners call this and feveral other creeping "kinds Couch-Grafs." This feems to have been a flip of the pen. The roots of the rough Cocksfoot are perfectly fibrous, and never have been obferved to *creep* by the writer of this, who has frequently fown it in his Garden. The Poa pratenfis indeed deferves the name of Couch, or Quich, equally with the Triticum repens or Dogs Grafs. Which appellation is only a corruption of *Quick* the antient term for *living*. The more you cut the roots of thefe Graffes the fafter they propagate themfelves.*

The Rough Cock's-foot bloffoms the fecond week in June, and prevails univerfally.

The feeds do not quit the panicle when ripe fo foon as thofe of many others of the Graffes.

The *Tips* of the Florets are fometimes flefh-coloured, at other times purplifh, and not unfrequently of a whitifh-yellow.

AVENA ELATIOR. (LIN.)

TALL OAT GRASS. (HUDSON and WITHERING.)

TALL OAT GRASS. ANGLIS. SWINES AR-NUTS, or EARTH-NUTS. SCOTIS. (LIGHTFOOT.)

The perennial Graffes in general do not produce flowering ftalks the firft feafon they are fown. From an experiment which was regiftered in the year 1780, this and the Cats-tail Grafs were found to be exceptions. Some feed of the Tall Oat, and of the Cats-tail, fown the 19th of April, produced flowering ftalks, which were in bloffom the 15th of Auguft following, and perfected their feeds by the 8th of September: when many other kinds of Grafs fown at the fame time, and in the fame fituation, fhewed no appearance of flowering ftalks that feafon. The Tall Oat prevails almoft every where; particularly in dry ground, and near the boundaries of fields.

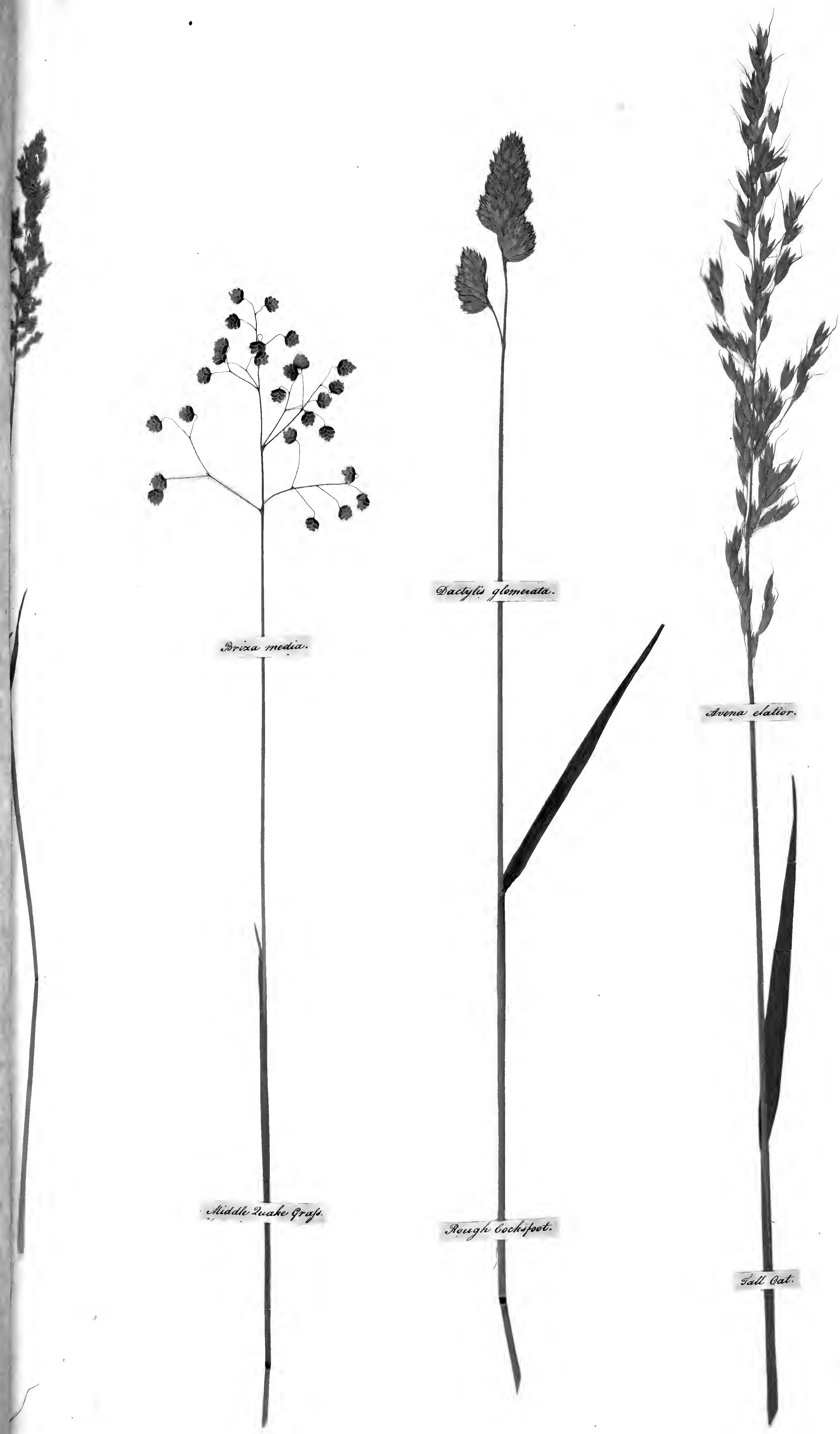
It is one of the talleft of the pafture Graffes; and is therefore very confpicuous.

It bloffoms near the fame time as the Rough Cock's Foot.

The feed muft be collected at the critical time of its ripening, or it will foon drop to the ground.

Its Tips are purple.

* See MARTYN's Letter on the Graffes.


Briza media.
Middle Quake Grass.
Dactylis glomerata.
Rough Cocksfoot.
Avena elatior.
Tall Oat.

FESTUCA PRATENSIS. (LIN.)

MEADOW FESCUE GRASS. (HUDSON and WITHERING.)
GREAT MEADOW GRASS. (ANDERSON.)
LARGER FESCUE.

Moist and low Meadows in general have the greatest abundance of this Grass. Its leaves are considerably broader than those of the other species of Fescue which has been treated of before. The flowering spikelets are likewise much larger and longer; and not bearded as those of the *smaller* Fescue. There is however another species of this Genus, which is frequently to be met with in Meadows that are wet; particularly near brooks and watery ditches. This is often in company with a Grass of a different family, the *(Aira cæspitosa)* *Turfy Hair Grass*; vulgarly called *Hassocks*, *Rough-caps*, *Bull's-faces*. &c. But, of both these Grasses, it is to be wished, that the Farmer will be so far from taking honourable notice, that he will use his utmost endeavours to get them eradicated, as they are so coarse, or otherwise disagreeable, that no Cattle will touch them unless compelled by severity of hunger. The only respect in which they will be of any use to the Farmer, whilst they continue in his grounds, is, that they will afford him a perpetual memento that the spots of ground where they grow would be much benefitted by draining.

It flowers the third week in June.

The anthers are purple.

For further observations on this Grass see Annals of Agriculture, N°. 70, P. 354.

LOLIUM PERENNE. (LIN.)

PERENNIAL DARNEL GRASS. (HUDSON and LIGHTFOOT.)
RED DARNEL GRASS, RAY-GRASS, RYE-GRASS. (WITHERING.)
RYE GRASS. (ANDERSON.)

Large quantities of the seed of this Grass are annually raised in many parts of the kingdom. And every Seed-shop will furnish it under the name of Ray, or Rye-Grass. It may therefore seem unnecessary to direct a collection of it by hand. But there is some reason to suspect that by long cultivation its nature has been somewhat altered. In its manured state, it blows early in June; and seems to approach to the nature of corn, running up chiefly to seed-stalks. In its wild state, it blows considerably later, and furnishes a much larger proportion of leaves. But perhaps this latter circumstance is attendant on most of the perennial Grasses, if they have been sown two or three years. It is meant, that they have a greater tendency to produce seed-stalks for the first year or two after they are sown; and that, afterwards, they endeavour to propagate themselves more by off-sets, and consequently produce a greater abundance of leaves.

Its Tips are commonly purple, but sometimes whitish.

This Grass is pretty largely treated of in ANDERSON's Essays, Vol. 2d. p. 232. and MARSHALL's Gloucestershire, vol. 1st, p. 157 & seq.

CYNOSURUS CRISTATUS. (LIN.)

CRESTED DOGS-TAIL GRASS. (HUDSON, WITHERING, ANDERSON, STILLINGFLEET and LIGHTFOOT.)
WINDLESTRAWS. (COMMON.)

The crested Dogs-Tail Grass is abundantly to be observed in downs and high pastures that are appropriated to the feeding of Sheep; which are generally dry; and it is likewise not uncommonly found in land that is far from being dry.

It has been remarked, that, altho' the grasses constitute the principal food of herbivorous animals, yet whilst they are left at liberty in the pasture, they leave untouched the straws which support the flowers, that the seeds may ripen and sow themselves.

The fact stated in this remark is particularly verified in the Dogs-Tail Grass: a great proportion of which, in most pastures, the cattle constantly suffer to run up to seed. But, it is apprehended, not with any such instinctive view as that just mentioned. This being a Grass whose flowering stems are not put forth till towards the latter end of June, when the *leaves* of most of the Grasses are every where in the greatest profusion, there is not then the same temptation or necessity for cattle to crop the *stalks*, as there is earlier in the season when the leaves of the Grasses are more scanty. Besides, the stalks of this Grass are peculiarly hard and tough: and perhaps the spike, the flowers of it being armed with a pectinated fence, may be unpleasant to the bite of cattle.

It is no difficult matter to collect a large quantity of the seed of this Grass; but the season of its ripening must be adverted to.

It flowers the latter end of June and beginning of July.

The Tips are of a dark purple colour.

From an experiment which was made with several of the Grasses in the year 1780, with a view to determine the different degrees of produce (an account of which follows) the Dogs-Tail appears in the least favourable light. But it must be remembered that the experiment was confined to one season. And it is probable that many of the Grasses, and perhaps those more especially which are most strictly perennial, do not attain to so great a perfection the first season, as others which are not so lasting. So that no certain conclusion can be drawn from it. 1780, April the 19th, sowed the following Grass seeds in Drills, in a Border of good Garden Mould, viz.

1. Meadow-Fescue.
2. Cats-Tail.
3. Tall Oat.
4. Rough Cocks-foot.
5. Smaller Fescue.
6. Crested Dogstail.
7. Meadow Foxtail.
8. Smooth Poa.
9. Fine Bent.
10. Annual Poa.
11. Rough-Stalk'd Poa.
12. Bulbous Poa.
13. Yellow Oat.

The plants in each drill were thinned and left six inches apart. Sept. 17th, the Grasses in the Drills being, as supposed, arrived at their full growth for the season, a plant of each sort of the medium size was taken up and weighed, the roots having been previously cut off.

	Oz.	Dwts	Gr.
No. 3. Tall Oat weighed -	2	18	7
1. Meadow-Fescue -	2	14	0
2. Catstail - - -	1	14	13
4. Cocksfoot - -	1	14	12
9. Fine Bent - -	1	8	12
8. Smooth-stalked Poa -	0	17	1

	Oz.	Dwts	Gr.
No. 10. Annual Poa - -	0	15	22
5. Smaller Fescue -	0	15	5
12. Bulbous Poa - -	0	9	6
13. Yellow Oat - -	0	4	22
6. Crested Dogstail -	0	3	9

N. B. The seeds of No. 7. Foxtail, and No. 11, Rough-stalked Poa, did not vegetate. No. 2, Catstail, and 3, Tall-Oat, had run up to seed. The Annual and Bulbous Poas were in blossom.

Festuca pratensis.

Meadow Fescue.

Lolium perenne.

Darnel or Rye Grass.

Cynosurus cristatus.

Crested Dogstail.

AVENA FLAVESCENS. (LIN.)

YELLOW OAT-GRASS. (CURTIS, HUDSON, WITHERING and LIGHTFOOT.)

The Yellow Oat-Grafs is one of the leaft of the Genus. It chiefly affects dry paftures; and generally accompanies the fmaller Fefcue and the crefted Dogftail. The beft fheep-paftures are principally occupied by thefe three Graffes. The yellownefs of the panicles when the feed approaches towards ripenefs, readily points out this Grafs. The feed when ripe does not immediately part from the hufks; and therefore the collector of it need not be fo particular as to the exact time of gathering it.

Its Tips are purple.

The beginning of July is the feafon of its flowering.

For further remarks on the Yellow Oat fee CURTIS's Flora Londinenfis.

HOLCUS LANATUS. (LIN.)

MEADOW SOFT-GRASS. (CURTIS, HUDSON, WITHERING, and LIGHTFOOT)

COCK's TAIL, or FEATHER GRASS. (ANDERSON.)

The leaves and ftalks of this Grafs are covered with a foft woolly fubftance, which gives the plant a hoary appearance, and has obtain'd for it in fome places the name of *White Grafs*. It flourifhes moft in very light and porous foils, and particularly in turfy or peat ground. About two thirds of the flowers of the panicle are furnifhed with only male organs: the remainder have both male and female. As thefe laft only are fertile, the perfon who collects the feed of this Grafs muft expect the chaff proportionally to exceed the quantity of feed. In one inftance this Grafs did not prove fo hardy as feveral others. May 1ift, 1782. A Plat about fix feet fquare was fown with this Grafs; it vegetated in due time, and flourifhed very well during the fummer; but in the enfuing winter was entirely killed; when fimilar and adjoining plats of the Catftail, Tall-Oat, Rough Cocks-foot, Meadow Barley, Fine Bent, Dogftail, and fmooth-ftalked Meadow, received not the leaft injury.

It bloffoms about the fecond week in July.

The *Tips* are at firft of a reddifh yellow, and afterwards purple.

See CURTIS's Flora, and ANDERSON's Effays.

AGROSTIS CAPILLARIS.* (LIN.)

FINE BENT. (HUDSON, WITHERING, STILLINGFLEET, and LIGHTFOOT.)

The *Bents* in general are partial to wet foils. And the *Fine Bent* was once fuppofed by the Author not to differ in this refpect from the greater part of the fpecies of this Genus. But he has fince found it abundantly on high fheep paftures, and particularly in fandy foils. This peculiarity therefore, together with the flender hair-like branches of the panicles, will ferve fufficiently to diftinguifh it from the reft of this family. There is indeed another fpecies of Bent (agroftis pumila) which grows on high, dry, and rocky fituations; which is a very dwarf plant, and flowers in May.

The *fine Bent* flowers about the fecond or third week in July.

Its anthers are of a lightifh purple.

See STILLINGFLEET's Tracts.

* *Now Vulgaris, see Withering's Arr.t 3.d Ed: Vol. 2. pag. 132.*

Avena flavescens.

Yellow Oat.

Holcus lanatus.

Meadow Soft Grass.

Agrostis capillaris.

Fine Bent.

HORDEUM PRATENSE. (LIN.)

MEADOW BARLEY GRASS. (HUDSON.)

WALL BARLEY GRASS. WAY BENNET. (WITHERING.)

LIGHTFOOT has not this ſpecies.

The Meadow Barley-Graſs grows chiefly on ground that is ſomewhat moiſt. There is another ſpecies of this Graſs which grows on walls and by the ſides of roads, but is ſcarcely ever to be met with in meadow or paſture grounds. This laſt mentioned ſpecies has its ſpikes and likewiſe the beards of the huſks much longer than thoſe of the *Meadow Barley*, and is often called by the common people in England *Way Bennet*, and by the inhabitants of Scotland *Squirrel-tailed* Graſs. *See Curtis's Flora, article Hordeum murinum.*

Dr. WITHERING has made the *pratenſe* a variety of the *murinum*; but they are certainly very diſtinct ſpecies.

The Hordeum murinum is an annual plant; the *pratenſe* a perennial.

The *Meadow-Barley* flowers the third week in July.

Its *Tips* are of a brimſtone colour.

PHLEUM PRATENSE. (LIN.)

MEADOW CATSTAIL GRASS. (HUDSON.)

TIMOTHY GRASS. (WITHERING.)

MEADOW CATSTAIL or TIMOTHY GRASS. (LIGHTFOOT.)

A ſpecies of the Phleum (but it is uncertain whether it be the ſame as the meadow Catſtail found wild in this country) is at preſent cultivated, pretty generally, by the Farmers in North America, under the name of Timothy Graſs. And attempts were made between twenty and thirty years ago to eſtabliſh the culture of it in this country; without ſucceſs. It is recorded to have obtained the name of *Timothy* Graſs from a Mr. TIMOTHY HANSON; who was the firſt cultivator of it. In the Muſeum ruſticum, vol. 2d, p. 161, it is ſaid to be cut green by the Americans for feeding their cattle, in the ſame manner Lucerne often is uſed in Europe, and is aſſerted to be ſo luxuriant as to yield them ſeveral crops in a ſummer; and that the inhabitants reckon it very wholeſome, ſweet, nouriſhing food. From this deſcription it ſhould ſeem to be a different ſpecies from ours, which does not ſpring early, nor vegetate with any luxuriance till late in the ſeaſon.

The Spikes of the Catſtail in ſome ſituations, as in wet ditches, are ſometimes ſix or ſeven inches long. The ſeeds of this Graſs remain well on the ſtalks.

It flowers the laſt week in July.

The anthers are ſmall, and of a dark purple colour.

AGROSTIS ALBA. (LIN.)

MARSH BENT. (HUDSON, WITHERING and LIGHTFOOT.)

The difficulty of diſtinguiſhing the different ſpecies of the ſame Genus, is perhaps in no family of the Graſſes ſo great as in that of the Agroſtes. The parts of fructification are ſo minute, and the ſpecific differences ſo inconſiderable, as to have occaſioned much obſcurity in the deſcriptions of botanical Writers. Mr. CURTIS has obſerved, "that no character in the Graſſes is more inconſtant than the awn, ariſta, or beard; in ſome Graſſes "whoſe character it is to be *muticæ* (without awns) it is preſent, as in the Lolium *perenne*, Agroſtis *capillaris*, and "*alba*; and in others whoſe character it is to be *ariſtatæ* (awned) it is wanting, as in the *Agroſtis canina*. The "ſtriking alteration in the appearance of the Graſs from this circumſtance has often been the cauſe of multiplying "ſpecies unneceſſarily." The ſpecimens of the two Bents and of the Darnel which appear in this collection will not prove examples of the exiſtence of the awn in theſe Graſſes. It is not however doubted but that in particular ſituations the awn may be preſent to them.

Mr. LIGHTFOOT is of opinion that it would perhaps be no error to conſider the *Marſh* Bent as only a variety of the *Stoloniſera* or *Running* Bent.

Dr. WITHERING has made theſe two, as well as the *capillaris*, diſtinct ſpecies.

Mr. HUDSON has ſcarcely noticed the *alba*, and has ranked all three, and indeed all the Engliſh Bents (except one) in which the awn is deficient, as varieties under the ſpecific term *polymorpha*.

The *White*, *running*, or *Marſh* Bent abounds chiefly in low meadows, near rivers, and in moiſt ditches. As it flowers late in the ſeaſon, and there is not for that reaſon ſo great a probability of the ſeed's ripening, nature has endow'd it with a power of propagating itſelf by another method, namely, by *runners* in the manner of Strawberries, Cinquefoil, &c. Theſe *runners* in ſome places extend for ſeveral yards, and are in low meadows very plentiful in the autumn. The Graziers in ſome parts of the weſt of England are not very partial to this production, to which they give the appellation of *fog*.

It flowers the latter end of July.

The Tips are white with a purple tinge.

Hordeum pratense.

Meadow Barley.

Phleum pratense.

Meadow Catstail.

Agrostis alba.

White Bent.

MUCH has been ſaid, and written, reſpecting a particular kind of Graſs, which grows in a ſmall meadow, in the pariſh of Orcheſton St. Mary, in Wiltſhire; which is aſſerted to produce a moſt extraordinary quantity of herbage; and to render the piece of ground, whereon it grows, exceedingly valuable. This Graſs has been ſought for by many: but of what kind it is, and whether it is really a peculiar kind of Graſs, has not been aſcertained. Mr. CURTIS (whoſe zealous attention to obtain, as well as readineſs to communicate uſeful knowledge, cannot be ſufficiently praiſed,) has endeavoured to develope this myſtery. By the favour of a Friend, reſiding near the Spot, he obtained ſix ſmall Turfs cut up in different parts of the above meadow. The Turfs were planted in his Garden. From the produce of theſe Turfs, he has concluded that the extraordinary fertility of this Meadow, does not ariſe from any new Graſs, peculiar to it, but from ſeveral unuſual circumſtances, concurring, and favouring in an uncommon degree the growth of certain well-known Graſſes, eſpecially the *Poa trivialis* and *Agroſtis alba*.—The account of this experiment is publiſhed in the Annals of Agriculture, No. 70, p. 352. The produce of only *five* of thoſe Turfs are mentioned. If Mr. CURTIS has thus fixed upon the *Poa trivialis* and *Agroſtis alba* from the frequency of their appearance in the Turfs which he planted, the liſt which he has given of the plants produced from thoſe Turfs, will, it is apprehended, ſcarcely juſtify the concluſion. The Poa *trivialis* indeed appears in all the five Turfs. But the next in frequency is the *Triticum repens*, or common *Couch* Graſs. This is a moſt remarkable circumſtance. As it is very rare that a ſingle blade of that Graſs appears in any meadow or paſture which has been in Graſs any conſiderable length of time. It is poſſible there might have been ſome roots of the Triticum repens in the plat, before the Turfs were admitted.

The Author has been informed that this meadow is ſituated near a ſmall River, from which it is liable ſometimes to be overflown; but not very frequently: and that after ſuch flooding it furniſhes a moſt extraordinary large Crop of Graſs; incomparably larger than when it has not been flooded. This rivulet is deſcribed as iſſuing from the Chalk-Hills at a ſmall diſtance above this meadow. And it is probable that the water brings down and depoſits on the land, a quantity of calcareous matter, to which its uncommon fertility is owing.

Altho' the Writer of this it quite of the opinion of Mr. CURTIS, that the fertility is not to be aſcrib'd to any particular Graſs, yet (from the intelligence of a Gentleman who viewed this meadow for two days laſt ſummer, at the time when the meadow had juſt begun to be mowed, and brought away with him ſome roots and flowering ſpecimens of a Graſs, which the people at work in the meadow, and an intelligent Farmer in the neighbourhood, aſſured him was the particular or famous Orcheſton Graſs) he has been led to conclude that the Graſs moſt predominant in that meadow, is, not the *Poa trivialis*, but the *Alopecurus pratenſis*. The Gentleman indeed was no Botaniſt. But upon ſhewing him ſome ſpecimens of Graſſes, he immediately fixed upon the *Foxtail*. As the meadow was mowed early in June, it ſeems at leaſt probable, that the Foxtail was at that time the moſt conſpicuous.*

As there is undoubtedly a particular period when the Graſſes are in the moſt proper ſtate for mowing; and as that ſtate is moſt probably about the time of their flowering, (either a little before or a little after) ſhould all the Graſſes of this collection be found upon fair trial to deſerve cultivation: The following Diagraph would ſeem to divide them into proper aſſortments to be ſown together; ſuppoſing the fields or meadows, where they are to be ſown, be principally intended for Hay. If an aſſortment for *three* crops only be deſired, the Brackets on the right hand will ſhew the diviſion. If *five* crops be required, the Brackets on the left hand will direct to the aſſortment. In the diviſion of *three* parts, the *firſt* crop will be fit to cut early in June. The *ſecond* about Midſummer. And the *third* about the middle of July. In the diviſion of *five* parts, the *firſt* will be ripe about the latter end of May; the *ſecond*, the beginning of June; the *third*, about Midſummer; the *fourth*, about the beginning of July; and the *fifth*, the middle or latter end of July.

The *annual Meadow*, *vernal*, *Smooth-ſtalked Meadow*, *ſmaller Feſcue*, *Dogſtail*, *yellow Oat*, and *fine* Bent, ſeem to be beſt adapted for the feed of Sheep; the reſt for the larger kinds of Cattle. The *Soft-Brome*, *ſmooth-ſtalked Meadow*, *ſmaller Feſcue*, and *yellow Oat*, are partial to dry ſoils. The *Vernal*, *Foxtail*, *rough-ſtalked Meadow*, *Quake Graſs*, *Meadow Feſcue*, *Soft Graſs*, *Meadow Barley*, *Catſtail*, and *Marſh Bent*, flouriſh moſt in moiſt ſoils. And ſoils of an intermediate quality as to moiſture and dryneſs, will beſt ſuit the remainder.

1	Annual Meadow flowers	1ſt week in May	1
	Vernal	2d week in May	
	Foxtail	Ditto	
	Soft Brome	3d week in May	
2	Smooth-ſtalked Meadow	4th week in May	
	Rough-ſtalked Meadow	1ſt week in June	
	Smaller Feſcue	Ditto	
	Quake Graſs	2d week in June	2
3	Rough Cock's-foot	Ditto	
	Tall Oat	Ditto	
	Meadow Feſcue	3d week in June	
	Darnel	4th week in June	
		Ditto	
4	Dogſtail	1ſt week in June	
	Yellow Oat	2d week in July	3
	Soft-Graſs	3d week in July	
	Fine Bent	Ditto	
5	Meadow Barley	4th week in July	
	Catſtail	Ditto	
	Marſh Bent		

* The Author has ſince received a tuft of this Graſs in a growing ſtate, and from the leaf he can venture to pronounce it the Alopecurus pratenſis.

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